

REMARKS

This paper is responsive to the Office Action mailed on September 27, 2007.

Claims 27 and 44 are amended, no claims are canceled, and no claims are added; as a result, claims 27, 33, 36-38 and 44-52 are presently pending in this application.

§103 Rejection of the Claims

Claims 27, 33, 36-38 and 44-52 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,541,164 to Kumar *et al.* (hereinafter, “the Kumar reference”) in view of Applicant’s admitted prior art (hereinafter, “the APA”), or alternatively, as being unpatentable over the Kumar reference in view of the APA and U.S. Patent No. 4,905,073 to Chen *et al.* (hereinafter, “the Chen reference”). Applicants disagree with the stated grounds of rejection and desire to further clarify various distinctions of the present invention over the cited art. Reconsideration of the present application is therefore requested in light of the following remarks.

Although the disclosed embodiments of the invention may be discussed in comparison to the prior art, it is understood that any discussion of the disclosed embodiments, as well as any discussion of the differences between the disclosed embodiments of the present invention and the prior art do not define the scope or interpretation of any of the claims. Instead, such discussed differences, if presented, are offered merely to help the Examiner appreciate important claim distinctions as they are discussed.

The Kumar reference is cited for disclosing a gate stack that includes, *inter alia*, a gate oxide layer formed on a substrate, a polysilicon layer formed on the gate oxide layer, a tungsten silicide layer formed on the polysilicon layer, and an antireflection layer formed on the tungsten silicide layer (Office Action; page 2-3). Although the Examiner concedes that the antireflective coating disclosed in the Kumar reference differs from the composition claimed in the present application, the Examiner cites the allegedly prior art composition (“the APA”) for this missing teaching.

Applicants respectfully submit that the cited references (e.g., the Kumar reference, and the Chen reference) fail to disclose, or to fairly suggest that the disclosed antireflection layer is functionally operable to reducing a stress imposed on a gate stack. Specifically, it is asserted that the disclosed antireflection layer is operable to reduce a stress that may be imposed by an adjacent silicon nitride layer.

Turning now to the claims, differences between the claim language and the applied references will be specifically pointed out. Claim 27, as amended, recites in pertinent part: “A gate stack, comprising...a silicon nitride layer on the layer comprising $\text{Si}_x\text{N}_y\text{O}_z\text{:H}_2$ wherein the polysilicon layer, the gate oxide layer, the metal silicide layer, the layer comprising $\text{Si}_x\text{N}_y\text{O}_z\text{:H}$, and the silicon nitride layer are patterned to form the gate stack, further wherein *the layer comprising $\text{Si}_x\text{N}_y\text{O}_z\text{:H}$ is configured to reduce a stress on the gate stack that is imposed by the silicon nitride layer.*”(Emphasis added). Applicants note that the Kumar and Chen references do not disclose, or fairly suggest this. Applicants therefore respectfully submit that claim 27 is now allowable. Claims depending from claim 27 are also allowable based upon the allowable form of the base claim, and further in view of the additional limitations recited in the dependent claims.

Claim 44, as amended, presently recites: “A gate stack, comprising... a means for protecting the metal silicide layer during an anneal, the means for protecting consisting of a $\text{Si}_x\text{N}_y\text{O}_z\text{:H}$ layer formed over and in physical contact with the annealed, metal silicide layer, wherein x is from 0.39 to 0.65, y is from 0.02 to 0.56, and z is from 0.05 to 0.33, the means for protecting the metal silicide layer being adapted to act as an antireflective layer, *wherein the $\text{Si}_x\text{N}_y\text{O}_z\text{:H}$ layer reduces a stress on the gate stack...*” (Emphasis added). Again, the Kumar and Chen references do not disclose, or fairly suggest this. Applicants therefore respectfully submit that claim 44 is also now allowable over the cited references. Claims depending from claim 44 are also allowable based upon the allowable form of the base claim, and further in view of the additional limitations recited in the dependent claims.

Finally, claim 50, *presently* recites in pertinent part: “A gate stack, comprising...*a means for alleviating stress on underlying layers, canceling reflected radiation, and*

protecting the annealed, titanium silicide layer during an anneal from gaseous oxygen, the means comprising a $\text{Si}_x\text{N}_y\text{O}_z\text{:H}$ layer formed over and in physical contact with the annealed, titanium silicide layer...". (Emphasis added). The Kumar and Chen references simply do not disclose, or fairly suggest this. Applicants therefore respectfully submit that claim 50 is presently allowable over the cited references. Claims depending from claim 50 are also presently allowable based upon the allowable form of the base claim, and further in view of the additional limitations recited in the dependent claims.

Reservation of Rights

In the interest of clarity and brevity, Applicant may not have addressed every assertion made in the Office Action. Applicant's silence regarding any such assertion does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other references of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612) 349-9587 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

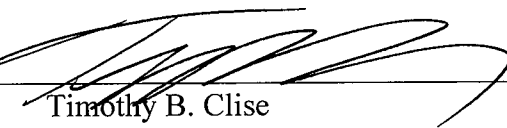
Respectfully submitted,

ZHIPING YIN ET AL.

By their Representatives,

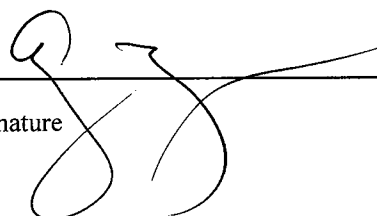
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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: MS Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 20th day of December 2007.

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